

Application of a Short-Term Aquatic Physical Therapy Program for a Patient with Chronic Low Back Pain and Radiculopathy: A Case Report



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Background

- Chronic low back (CLBP) pain is a common referral to outpatient PT¹
- Radiculopathy has the potential to contribute to back pain
- Aquatic PT is utilized at select sites to treat patients with various debilitating conditions
- Aquatic PT has been shown to improve quality of life, disability and pain²
- Limited understanding on the short-term effects of aquatic PT
- Must work within the confines of approved PT visits by local and national insurance companies

Purpose

- Investigate if six physical therapy visits with aquatic intervention for a patient with chronic low back pain and radiculopathy improves a patient's subjective and objective impairments in relation to his quality of life

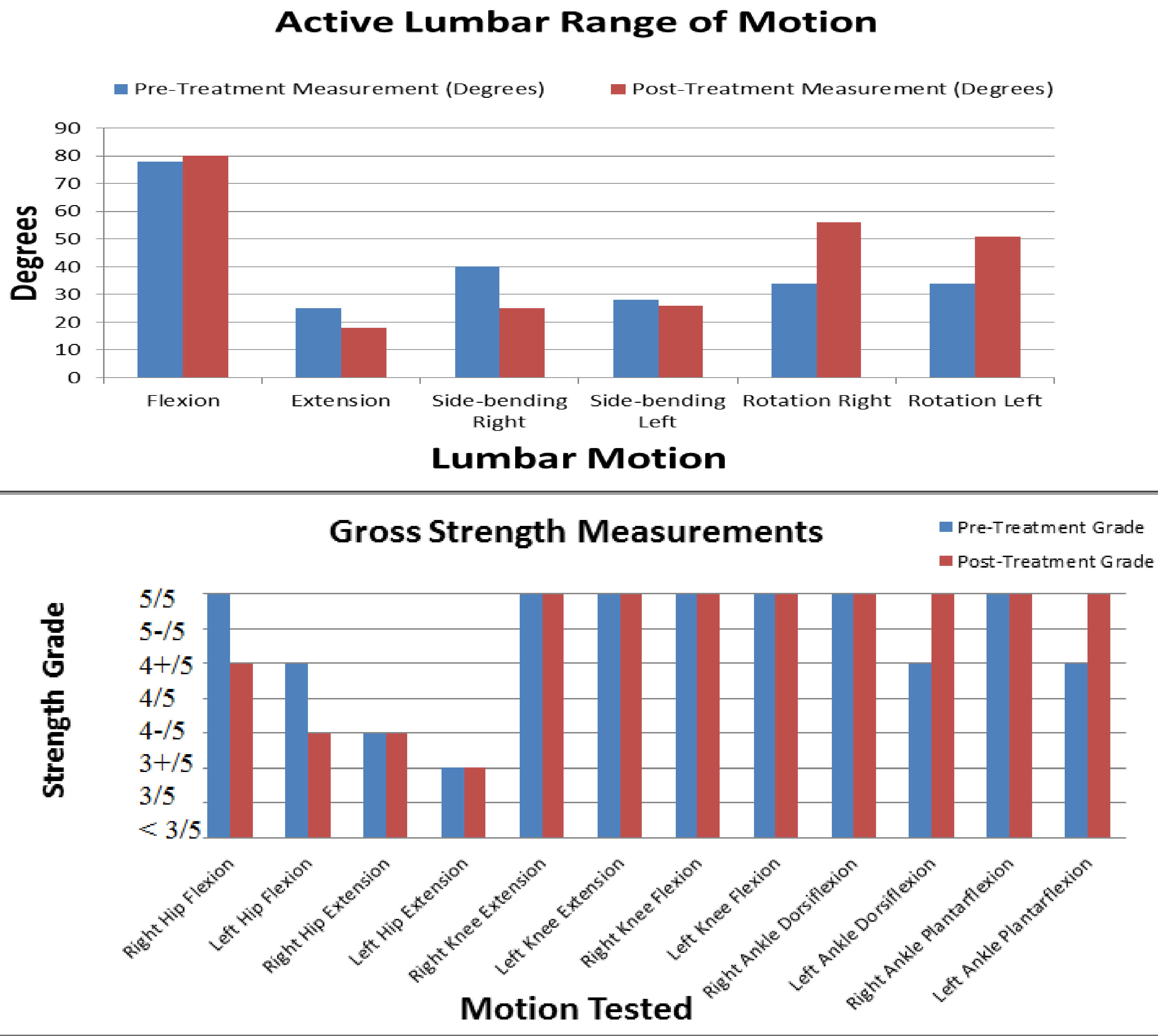
Case Description

- 62 year old male referred with CLBP and radiculopathy, left lower extremity more affected than right lower extremity
- Progressively worsening back pain for 40 years after lifting accident at work; radiculopathy presented 1 month prior to the examination
- Retired United States veteran
- Referred by doctor at United States Department of Veteran Affairs
- 6 approved PT visits

Examination

| History | Subjective/ Objective Impairments | |
|--|--|--|
| <ul style="list-style-type: none">Low back pain for 40 yearsHistory of smokingHigh blood pressureDiabetesSurgery: cervical fusion and left knee arthroscopePolypharmacy | <ul style="list-style-type: none">QOLS-CPNPRSODIAROMGross LE StrengthDTRs | <ul style="list-style-type: none">GaitTender to palpatePosture(+) SLR |

Objective Outcomes



(Range of Motion measured via goniometry, Gross Strength measured via manual muscle testing)

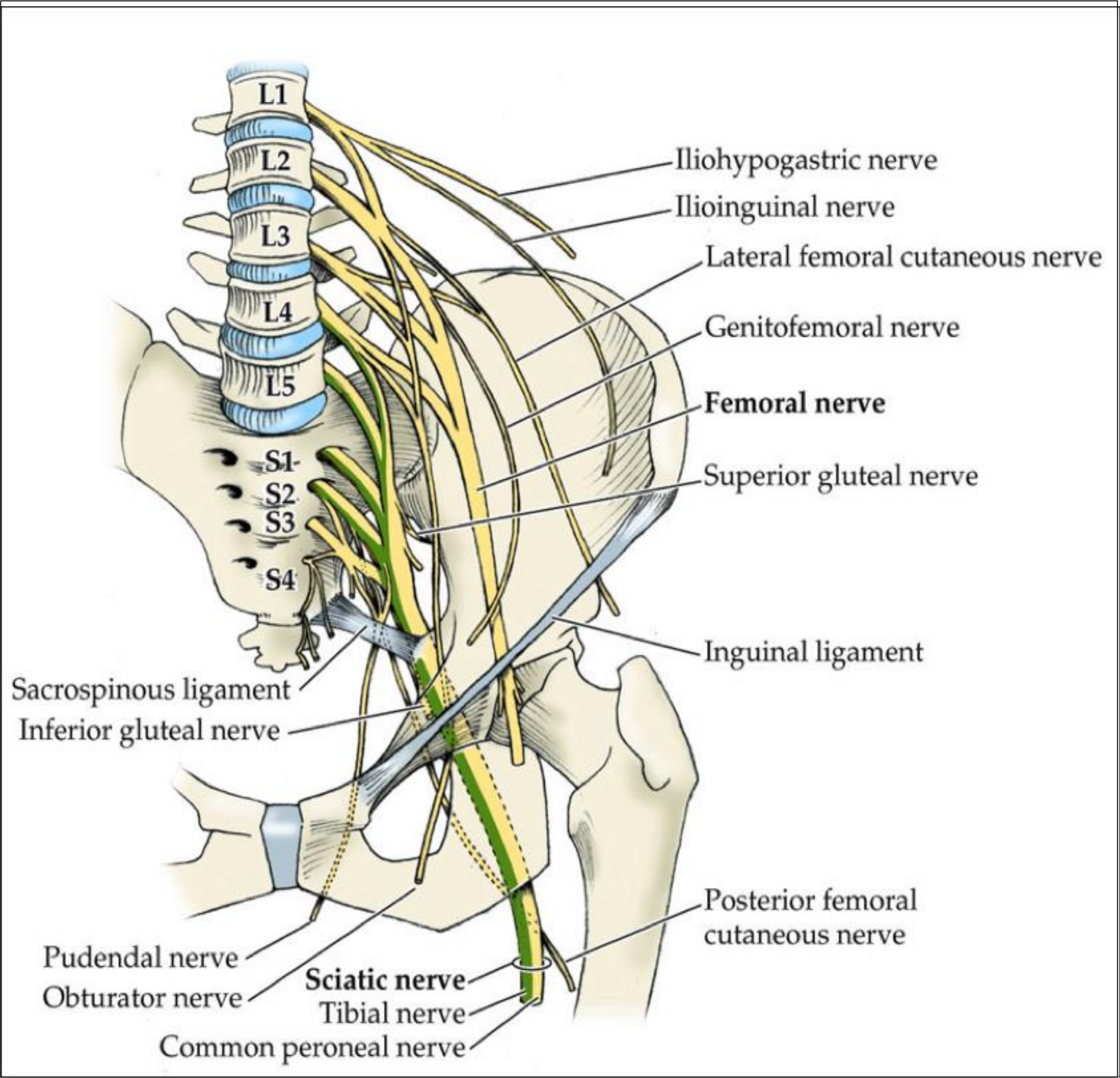


Image: Neuroanatomy of the Lumbosacral Spine
(http://www.learnneurosurgery.com/uploads/1/6/6/8/16689668/82611_orig.png)

Intervention

| Exercise | First Treatment | Final Treatment | Exercise | First Treatment | Final Treatment |
|--------------------------|-----------------|-----------------|-------------------------------------|-------------------------|-------------------------|
| 1. Ambulation | 3 minutes | 3 minutes | 7. Trunk Rotation with Noodle | 2 minutes | 3 minutes |
| 2. Side Steps | 3 minutes | 3 minutes | 8. Bicycles | 2 minutes | Discontinued |
| 3. 3 Way Hip Kicks | 2 minutes | 3 minutes | 9. Scissors | 2 minutes | 2 minutes |
| 4. Heel Raises | 2 minutes | 3 minutes | 10. Hip Internal/External Rotations | 2 minutes | 2 minutes |
| 5. Leg Press with Noodle | 2 minutes | 2 minutes | 11. Long Arc Quads | 2 minutes | 2 minutes |
| 6. Step Ups | 1 minute | 2 minutes | 12. Standing Hamstring Stretch | 3 sets, 30 second holds | 3 sets, 30 second holds |

Subjective Outcomes

| Outcome Measure Used | Pre-Treatment Score | Post-Treatment Score | Status at Discharge |
|----------------------|---------------------|----------------------|---------------------|
| NPRS | 9/10 | 6/10 | Improvement |
| ODI | 40% | 44% | Regression |
| QOLS-CP | 3/10 | 3/10 | No Change |

Abbreviations: NPRS = Numeric Pain Rating Scale, ODI = Oswestry Disability Index, QOLS-CP = Quality of Life Scale for Patients with Chronic Pain

Discussion

- While progress was apparent in some measures, there was regression or no change in others
- Several reasons for plausible inconsistencies
- Further investigation is warranted

References

1. Jette AM, Smith K, Haley SM, et al. Physical therapy episodes of care for patients with low back pain. *Phys Ther*. 1994 Feb;74(2):101-110.
2. Baena-Beato PA, Ariero EG, Arroyo-Morales M, et al. Aquatic therapy improves pain, disability, quality of life, body composition and fitness in sedentary adults with chronic low back pain: A controlled clinical trial. *Clin Rehabil*. 2014;28(4):350-60. doi: 10.1177/0269215513504943

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